

mouse producing fully human IgG2 antibodies specific for a desired antigen when immunized with said desired antigen.

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~~48~~. The transgenic mouse ~~and progeny~~ according to claim ~~46~~¹, wherein all of the somatic and germ cells comprise the human DNA contained in the yH1C YAC having ATCC accession no. 74367.

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~~49~~. The transgenic mouse ~~and progeny~~ according to claim ~~47~~², wherein all of the somatic and germ cells comprise the human DNA contained in the yH1C YAC having ATCC accession no. 74367.

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~~50~~. The transgenic mouse ~~and progeny~~ according to claim ~~47~~³, wherein said fragment of human chromosome 2 extends from the three most proximal Vk gene segments, continuing through the Jk and Ck gene segments, through the human kappa deleting element.

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~~51~~. The transgenic mouse ~~and progeny~~ according to claim ~~49~~⁴, wherein said fragment of human chromosome 2 extends from the three most proximal Vk gene segments, continuing through the Jk and Ck gene segments, through the human kappa deleting element.

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~~52~~. The transgenic mouse ~~and progeny~~ according to any one of claims ~~46-51~~¹⁻⁶, wherein all of the somatic and germ cells further comprise:

a) inactivated endogenous immunoglobulin heavy chain loci in which all of the J segment genes are deleted to prevent rearrangement and to prevent formation of a transcript of a rearranged locus and the expression of an endogenous immunoglobulin heavy chain; and

C b) inactivated endogenous immunoglobulin light chain loci in which the C κ gene is deleted to prevent ~~rearrangement and to prevent formation of a transcript of a rearranged locus and the~~ expression of an endogenous immunoglobulin light chain;

wherein said transgenic mouse and progeny lack expression of endogenous immunoglobulin heavy chains.

B¹ 53. A transgenic mouse and progeny, wherein all of the somatic and germ cells comprise a portion of an unrearranged human immunoglobulin heavy chain locus and a portion of an unrearranged human immunoglobulin kappa light chain locus, wherein said transgenic animal when immunized with a desired antigen produces high affinity fully human IgG antibodies specific for said desired antigen, said high affinity antibodies being characterized by dissociation constants (K_d) of 2×10^{-9} or less.

54. The transgenic mouse and progeny according to claim 53, wherein the high affinity fully human antibodies specific for a desired antigen are characterized by dissociation constants (K_d) of 10^{-10} or less.

55. The transgenic mouse and progeny according to claim 53 or 54, wherein all of the somatic and germ cells further comprise:

a) inactivated endogenous immunoglobulin heavy chain loci in which all of the J segment genes are deleted to prevent rearrangement and to prevent formation of a transcript of a rearranged locus and the expression of an endogenous immunoglobulin heavy chain; and

b) inactivated endogenous immunoglobulin light chain loci in which the C κ gene is deleted to prevent rearrangement and to prevent formation of a transcript of a rearranged locus and the expression of an endogenous immunoglobulin light chain;

wherein said transgenic mouse and progeny lack expression of endogenous immunoglobulin heavy chains.

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~~56~~. A method for producing a fully human IgG antibody specific for a desired antigen, comprising:

- (a) immunizing a transgenic mouse according to any one of claims 46-~~54~~⁵² with said desired antigen; and
- (b) recovering the antibody .

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~~57~~. The method according to claim ⁸~~56~~, wherein the desired antigen is selected from the group consisting of: leukocyte markers; histocompatibility antigens; integrins; adhesion molecules; interleukins; interleukin receptors; chemokines; growth factors; growth factor receptors; interferon receptors; immunoglobulins and their receptors; tumor antigens; allergens; viral proteins; toxins; blood factors; enzymes; ganglioside GD3, ganglioside GM2; LMP1, LMP2; eosinophil major basic protein, eosinophil cationic protein; pANCA; Amadori protein; Type IV collagen; glycated lipids; γ -interferon; A7; P-glycoprotein; Fas (AFO-1) and oxidized-LDL.

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~~58~~. The method according to claim ⁸~~56~~, wherein the desired antigen is human IL-8.

59. A fully human IgG2 antibody specific for human IL-8, comprising a heavy chain with the amino acid sequence